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10/698,864	10/31/2003	Simon J. Lewis	15581.10.1	2003

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EXAMINER
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LUKS, JEREMY AUSTIN

ART UNIT	PAPER NUMBER
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2837

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Please find below and/or attached an Office communication concerning this application or proceeding.

3/1

<b>Office Action Summary</b>	<b>Application No.</b> 10/698,864	<b>Applicant(s)</b> LEWIS, SIMON J.	
	<b>Examiner</b> Jeremy A. Luks	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/13/2005</u> | 6) <input checked="" type="checkbox"/> Other: <u>Figures A, B and C.</u>                |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9, 10, 25, 26, 29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi (5,969,299).

With respect to Claims 1, 9, 10, 25 and 32, Yamaguchi teaches a tubular body (Figure 2, #2) having an interior surface (7) extending between a first end (5) and an opposing second end (11), the interior surface (7) bounding a chamber (C1-C3), an exhaust cap (13) disposed on the second end (11) of the tubular body (2), the exhaust cap (13) having an interior surface (12) bounding a channel (27) extending through the exhaust cap (13), the channel (27) being in communication with the chamber (C1-C3) of the body (2), an inlet cap (3) disposed on the first end (5) of the tubular body (2); a perf tube (24) longitudinally disposed within the chamber (C1-C3) of the tubular body (2); and a spark arrestor (Figure A, #A – See exploded view of spark arresting feature from Yamaguchi (5,969,299), Figure 5, provided by Examiner at the end of this Office Action) comprising a tubular neck (23) having a first end (1002) and an opposing second end (1003), the second end (1003) being removably secured (Col. 4, Lines 27-34) to the exhaust cap (Figure 2, #13) such that the first end (1002) is advanced within the channel (27) of the exhaust cap (13) toward the body (2); and a spark barrier (30)

mounted on the first end (1002) of the tubular neck so as to be at least partially disposed within the perf tube (24), the spark barrier (30) being comprised of a sheet of mesh or porous material (Col. 4, Lines 20-22), and having one or more exposed ribs (31). Yamaguchi further teaches at least a portion of the exhaust cap (Figure 5, #13) having a thickness that is different than a thickness of the tubular body (2); and noise-absorbing packing (8, 25) disposed between the perf tube (24) and the body (2).

With respect to Claim 2, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given little patentable weight. Yamaguchi teaches wherein the body and exhaust cap are comprised of a metal.

With respect to Claim 3 and 26, Yamaguchi teaches an exhaust cap (Figure 5, #13) comprising a tubular sidewall (11<sub>1</sub>) having a first end integrally formed (32) with the second end (11) of the body (2) and an opposing second end terminating at an end face; and the exhaust cap (Figure 2, #13) having an interior surface (12) bounding a channel (27) extending through the exhaust cap (13) so as to communicate with the body (2).

With respect to Claim 29 Yamaguchi teaches a muffler body (Figure 3, #2) having a substantially uniform transverse cross section along the length thereof (See cross-sectional view of Figure 3).

2. Claims 11, and 14-21, 23 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Moller (3,987,867).

With respect to Claims 11, 14 and 19-21, Moller teaches a base (Figure 1, #6)

having an opening (8) extending therethrough; and a spark barrier (16) mounted to the base (6), the spark barrier (16) being comprised of a sheet of mesh or porous material (Col. 2, Lines 15-26) having at least a substantially tubular, domed, conical, or frustoconical configuration, the sheet of mesh material (Col. 2, Lines 15-26) further comprising at least seven discrete exposed folds (Figure 2, #19) through which exhaust gas can pass; the folds (19) increasing the surface area of the mesh or porous material (Col. 2, Lines 15-26) per volume of space.

With respect to Claims 15, 16, 23 and 24, Moller teaches a spark barrier (Figure 1, #14) having a mounting end (9) secured to the base (6) and an opposing free end (12) spaced apart from the mounting end (9), each of the plurality of folds (Figure 2, #19) longitudinally extending between the mounting end (Figure 1, #9) and the free end (14), the free end (14) of the spark barrier (16) being sealed closed (12).

With respect to Claims 17 and 18, Moller teaches a spark barrier (Figure 1, #16) having an elongated substantially tubular configuration (See tubular configuration of spark barrier #16 in Figure 1) and a substantially polygonal transverse cross section (Figure 6, 24).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 12, 22, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (5,969,299) in view of Moller (3,987,867).

With respect to Claims 30 and 31, Yamaguchi is relied upon for the reasons and disclosures set forth above. Yamaguchi fails to teach a spark barrier having at least seven exposed folds through which exhaust gas can pass, the folds increasing the surface area of the mesh or porous material per volume of space.

Nevertheless, Moller teaches a spark barrier (Figure 1, #14) having at least seven exposed folds (Figure 2, #19) through which exhaust gas can pass, the folds (19) increasing the surface area of the mesh or porous material (Figure 1, #16) per volume of space.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler apparatus of Yamaguchi with the spark arrestor folds of Moller to create lower assembly time and production costs associated with the simpler design of Moller.

With respect to Claims 12 and 22, Yamaguchi teaches a base (Figure A, #1001 – See exploded view of spark arresting feature from Yamaguchi (5,969,299), Figure 5,

provided by Examiner at the end of this Office Action) comprising a tubular neck (23) having a first end (1002) and an opposing second end (1003), the spark barrier (30) being mounted to the first end (1002) of the tubular neck (23) so that exhaust gas can pass through the spark barrier (30) and into the tubular neck (23).

4. Claims 4-8, 13, 27, 28 and 33-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (5,969,299) in view of Moller (3,987,867), and further in view of Tsukahara (5,718,045)

With respect to Claims 4, 7, 13, 27 and 28, Yamaguchi and Moller are relied upon for the reasons and disclosures set forth above. Yamaguchi and Moller fail to describe a bent or curved tubular neck and exhaust channel. Nevertheless, Tsukahara teaches a body (Figure B, #5 – See exploded view of Figure 3 from Tsukahara (5,718,045), provided by Examiner at the end of this Office Action) having a central longitudinal axis extending through the chamber (C1-C4) thereof, the end face (102) of the exhaust cap (7) being disposed in a plane that forms an inside angle with the central longitudinal axis that is less than about 80°, the channel (108) of the exhaust cap (7) being bent or curved (14) relative to the central longitudinal axis.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler and spark arrestor configurations of Yamaguchi and Moller with the muffler apparatus of Tsukahara in order divert exhaust gasses away from the vehicle.

With respect to Claim 5, Tsukahara teaches that the sidewall of the exhaust cap (Figure B, #7) has an exterior surface (103) that radially inwardly tapers from the first (106) end to the second end (107) thereof.

With respect to Claim 6, Tsukahara teaches that the first end (Figure B, #104) of the side wall of the exhaust cap (7) has an inside face (101) that radially inwardly projects relative to the body (5), a tubular stem (101) projects from the inside face (105) toward the body (5), the tubular stem (101) bounding at least a portion of the channel (108) extending through the exhaust cap (7).

5. Claims 8, 33-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (5,969,299) in view of Moller (3,987,867), and further in view of Klein (US 2002/0108428 A1).

With respect to Claims 8, 33, 35, 36, 42 and 43, Yamaguchi discloses a tubular body (Figure 2, #2), having a first end (5) and an opposing second end (11), with a mounting bracket (14) secured to the exterior surface of the top wall. Yamaguchi fails to describe the other elements described in these claims. Moller also fails to teach the elements described by these claims.

On the other hand, Klein teaches a body comprising a top wall (Figure C, #101 – See exploded view of Figure 2 from Klein (US 2002/0108428 A1), provided by Examiner at the end of this Office Action), a bottom wall (102), and a pair of opposing side walls (103, 104) extending therebetween, the top wall (101) and bottom wall (102) having a substantially flat exterior surface extending along the length thereof; and the top wall (101) having a thickness (11) and each of the side walls having a thickness (105), the



thickness (11) of the top wall (101) being greater than the thickness (105) of at least one of the side walls (104).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler and spark arrestor configurations of Yamaguchi and Moller with the exhaust housing of Klein to provide an exhaust housing with high strength and shape stability that is lightweight.

With respect to Claim 34, Klein teaches where at least one of the sidewalls (Figure C, #103) has an outwardly bowed exterior surface extending along the length thereof.

With respect to Claim 37, Yamaguchi teaches a muffler body (Figure 3, #2) having a substantially uniform transverse cross section along the length thereof (See cross-sectional view of Figure 3).

With respect to Claims 38 and 39, Yamaguchi teaches a tubular body (Figure 2, #2) having an interior surface (7) bounding a chamber (C1-C3), an exhaust cap (13) integrally formed on the second end (11) of the tubular body (2), the exhaust cap (13) having an interior surface (12) bounding a channel (27) extending through the exhaust cap (13) so as to communicate with the chamber (C1-C3) of the body (2); an inlet cap (3) disposed on the first end (5) of the tubular body (2); a perf tube (24) longitudinally disposed within the muffler canister (1); and noise absorbing packing (8) disposed between the perf tube (24) and the canister (1).

With respect to Claim 40, Yamaguchi teaches a spark arrestor (Figure A, #A – See exploded view of spark arresting feature from Yamaguchi (5,969,299), Figure 5,

provided by Examiner at the end of this Office Action) comprising a tubular neck (23) removably disposed (Col. 4, Lines 27-34) within the channel (27) of the end cap (13), the tubular neck (23) having a first end (1002) and an opposing second end (1003); and a spark barrier (30) mounted at the first end (1002) of the tubular neck so as to be at least partially disposed within the chamber (Figure 2, C1-C3) of the body (2), the spark barrier (30) being comprised of a sheet of mesh or porous material (Col. 4, Lines 20-22).

With respect to Claim 41, Yamaguchi teaches a sheet of mesh or porous material (Col. 4, Lines 20-22). Yamaguchi fails to teach a plurality of folds. Nevertheless, Moller teaches a plurality of folds (Figure 2, #19).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record related to mufflers with spark arrestors are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy A. Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on (571) 272-2800 x33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeremy Luks  
Patent Examiner

Art Unit 2837

A handwritten signature in black ink, appearing to read "Edgardo San Martin".

**Edgardo San Martin**  
**Primary Patent Examiner**

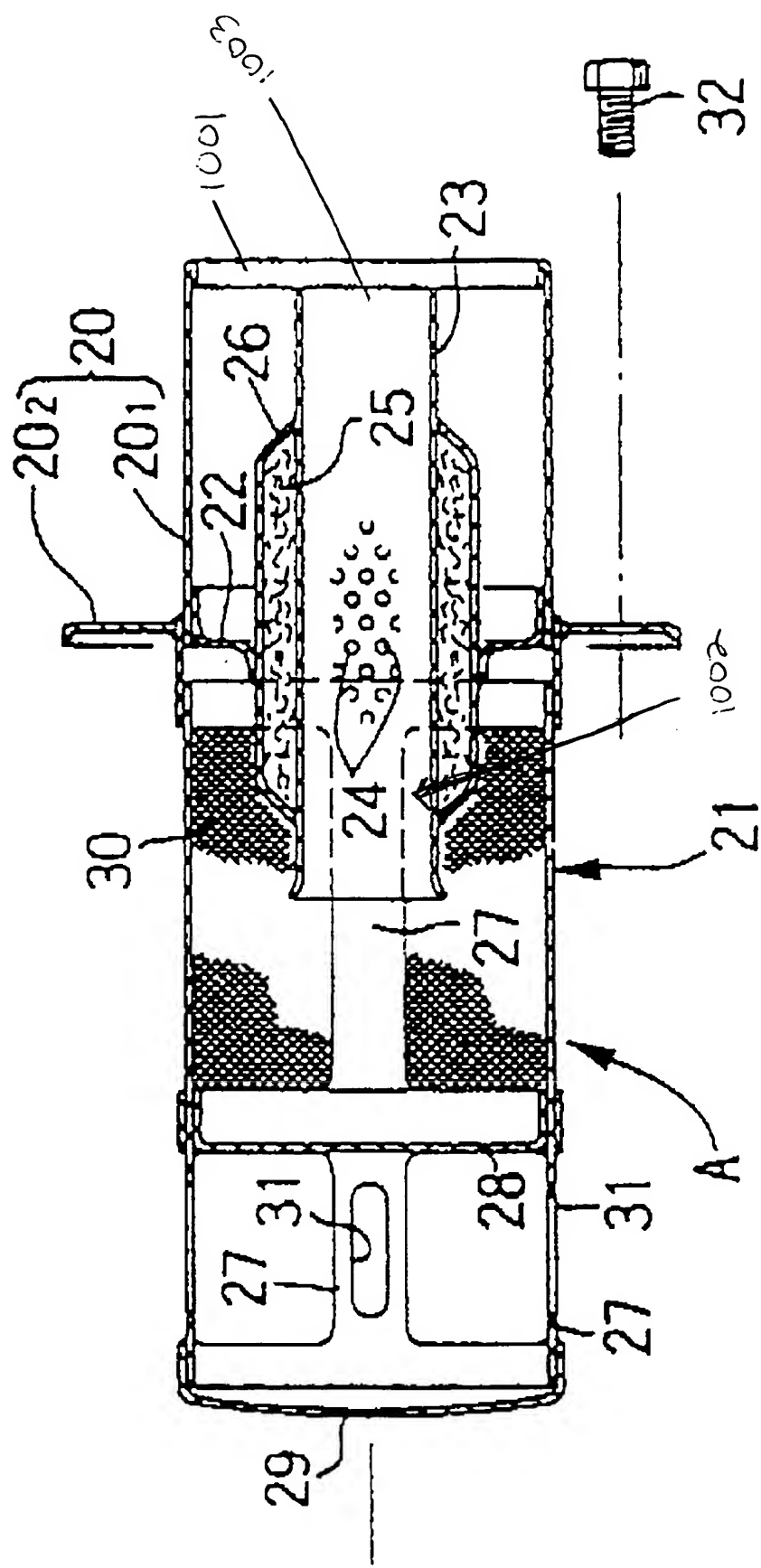


Figure A.

from Yamaguchi, 5,969,299, Figures

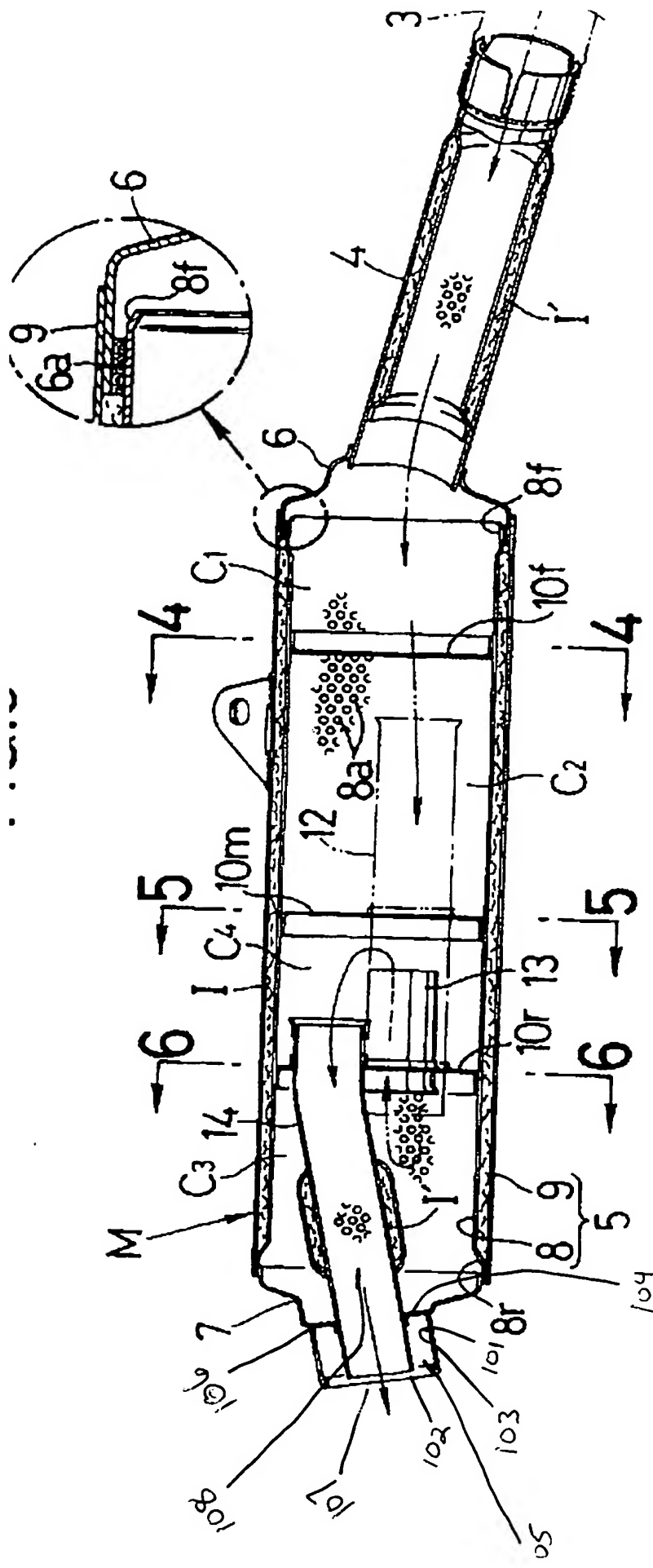


Figure B.

from Tsukahara, 5,718,045, Figure 3

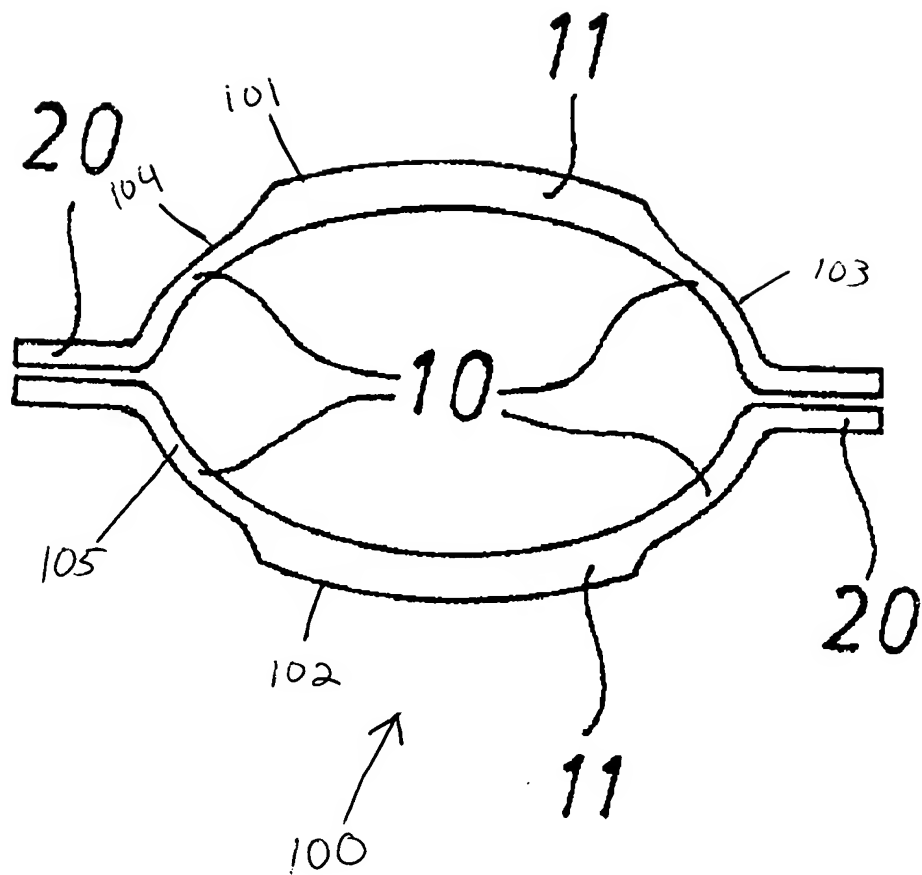


Figure C.

from Klein, US 2002/0108428 A1, Figure 2